

Surprises in Operations on the Inguinal Area in Young Children

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PERHAPS the most common operative procedures in infants and young children involve the inguinal area for the repair of hernia, hydrocele and undescended testicle.

Many of the unexpected findings in such operations are peculiar to children. An awareness of the possibility of such surprises is essential to physicians who do inguinal operations in pediatric age groups.

The following instances of unexpected pathologic conditions are drawn from the author's practice and

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TABLE 1.—"Lumps" in the Groin in Children

Differential Diagnosis

CONGENITAL

Hernia

Indirect

Complete

Incomplete

Sliding

Male: cecum, appendix, sigmoid

Female: tube, ovary, uterus

Littre

Pseudo-hermaphrodite

Hydrocele

Tunica vaginalis

Encysted, of the cord (Processus vaginalis)

Canal of Nuck

Cryptorchidism

Unilateral

Bilateral

Ectopic spleen

Ectopic adrenal

Diverticulum of the bladder

ACQUIRED

Direct hernia

Femoral hernia

Richter's hernia

Torsion

Testicle

Appendix testis

Ovary

Incarceration

INFLAMMATORY

Inguinal adenitis

Primary

Secondary

Cat scratch, etc.

Adenitis of Cloquet's node

Suppurative iliac adenitis

• In surgical operations in the inguinal area in infants and children many unusual pathologic states were observed that were at first thought to be simple hernia. Among the conditions observed, in addition to complicated hernias and other anomalies of the processus vaginalis, were male pseudo-hermaphroditism, ectopic spleen, ectopic adrenal with neuroblastoma, diverticulum of the bladder, inguinal adenitis and suppurative iliac adenitis.

In light of the sometimes surprising contents of the hernia sac, good exposure and careful identification of all anatomic structures is mandatory.

from his experiences and that of other surgeons in a large children's hospital.

"Lumps" in the groin in children are classified in Table 1 for the purpose of differential diagnosis.

CONGENITAL "LUMPS"

The first unusual situation involving congenital hernias concerns sliding hernia in the male. The first step is to make the incision longer than that routinely used for exposure. Frequently only a small sliding element is present and the reconstruction of a 360° peritoneal circumference at the internal ring can be accomplished without a counter incision. If the hernia is large and the anatomic features are hard to identify, a La Roque maneuver, such as is used in adults can be used quite satisfactorily. Unless good exposure is accomplished, there is hazard of inadvertent removal of tissue that is not a part of the hernial sac.

Quite common in infant girls is the finding of an ovary, a tube or the uterus sliding into the neck of the hernial sac. Dealing with such a situation can be somewhat perplexing, for considerable bleeding is entailed in dissection of the medial aspect of the sac and the blood supply to the tube and ovary is endangered. Also, since the procedure leaves these structures hanging free within the peritoneal cavity, torsion may occur. A useful technique for reconstruction of the neck of the peritoneal sac is that of Goldstein and Potts,¹ in which the broad ligament, tube and ovary are inverted and the internal ring is closed, leaving the adnexal attachments and avoiding the dissection in the broad ligament.

The Littré hernia, in which the sac contains Meckel's diverticulum, should be dealt with in the same manner as any hernia in which tissue that ought not be removed is incarcerated in the hernial sac—by careful identification and separation before repair is carried out. If treatment of the diverticulum is necessary, a secondary incision should be made lest the inguinal area become contaminated.

In one case in which an ovary apparently was involved in the material incarcerated in a hernial sac, closer inspection brought doubt as to the identity of the tissue and a pathologist who examined a frozen section diagnosed "testicle." The immediate course in such circumstances is to determine the character of the opposite gonad and the presence or absence of a uterus. If a second testicle is found, and there is no semblance of external male genitalia, both testicles are removed. A biopsy specimen of skin is taken for chromosomal determination of sex. Examination of buccal smears is done later. The male pseudo-hermaphrodite will fare better as an infertile female than as a male without external genitalia.

The rarest of hydroceles is that of the canal of Nuck. It is analogous to the encysted hydrocele of the processus vaginalis of the male. Lesions of this kind may not be discernible by transillumination, for often they are beneath the external oblique fascia. They may be palpable as fixed, firm fusiform, non-tender masses. Deep palpation may show them to be separate from the internal ring, which helps to distinguish them from hernia. For surgical exposure, the same kind of incision that is used for repair of hernia is used.

Cryptorchidism seems to predispose the testicle to torsion, which calls attention to the condition. At the time operation for relief of torsion is done, the opposite undescended testicle may be drawn down and anchored. The twisted testicle is never sacrificed.

The embryologic development of the spleen and the gonad from about the same area near the urogenital ridge explains why accessory spleens are found in the scrotum and along the path of the processus vaginalis. These abnormalities are easily recognized and managed by routine procedure.

Ectopically placed adrenal tissue of the inguinal area is also easily explained as the result of residual remnants of primitive cells developing in the path of the testicle and processus vaginalis.

ACQUIRED "LUMPS"

Although rare, a direct hernia sometimes is observed in an infant or child. In the cases I have dealt with, these lesions caused symptoms and at operation a defect in the floor of the canal medial to the epigastric vessels was noted. Repair is by simple imbrication of the transversalis fascia.

Femoral hernia in infants, also rare, is best managed by a McVay Cooper's ligament repair and anatomic reconstruction of the abdominal wall.

The problems of incarceration include Richter's hernia and differentiation between torsion of the appendix, a testicle or an ovary, and the ruling out of an inflammatory process. While the preoperative diagnosis is frequently correct, usually there can be no certainty without surgical exposure.

INFLAMMATORY LUMPS

The inguinal canal is generally quite free of lymph nodes, but occasionally the node of Cloquet, which is the highest in the femoral area and normally lies behind Poupart's ligament, may be involved in the inguinal canal at or just behind the internal ring. The tumors caused by involvement of this kind are usually deep and painful and are difficult to differentiate from incarcerated hernia or perhaps even from incarcerated interstitial hernia as seen in adults. Involvement of this node at the internal ring has been observed secondary to infantile vaginitis, to pustular diaper rash, to cat scratch disease and to inflammation of the toes.

Although a considerable problem when it does occur suppurative iliac adenitis is rare nowadays. In one such case, inguinal drainage was necessary, then retroperitoneal drainage of a higher abscess four months later, and drainage of a metastatic abscess of the omentum at the flexure six months after that.

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